LISTING OF THE CLAIMS

1. (Currently amended) A microfluidic device comprising a microfluidic network, the device comprising~~, including~~:

an input port for receiving a particle-containing liquidic sample;

a retention member in communication with the input port and configured to spatially separate particles of the particle-containing liquidic sample from a first liquidic portion of the ~~liquid of the particle containing~~ particle-containing liquidic sample; ~~and~~

a reservoir in communication with the retention member and configured to receive at least some of the first liquidic portion separated from the particles, wherein a pressure within the reservoir increases upon receiving the first liquidic portion; and

a gate configured to open a channel downstream of the reservoir thereby decreasing the pressure within the reservoir so that ~~a pressure actuator configured to recombine~~ at least some of the separated particles recombine with a subset of the first liquidic portion ~~of the liquid~~ separated from the particles.

2. (Cancelled)

3. (Currently amended) The microfluidic device of claim 1, wherein a ratio of a volume of the subset of the first liquidic portion ~~of liquid~~ to a volume of the first liquidic portion ~~of liquid~~ is at least 1%.

4. (Currently amended) The microfluidic device of claim 1, wherein a ratio of a volume of the subset of the first liquidic portion ~~of liquid~~ to a volume of the first liquidic portion ~~of liquid~~ is less than 25%.

5. (Original) The microfluidic device of claim 1, wherein the retention member is a filter.

6. (Cancelled)

7. (Previously presented) A method for processing a particle-containing liquidic sample, including:

inputting a particle-containing liquidic sample into a microfluidic device including a retention member including a surface;

spatially separating a first portion of the liquid of the particle-containing liquidic sample from particles of the liquidic sample by passing the first portion of the liquid through at least the surface of the retention member; and

recombining the retained particles with a subset of the first portion of the liquid.

8. (Currently amended) The method of claim [[8,]] 7, wherein recombining the retained particles includes reducing a pressure within the microfluidic device.

9. (Currently amended) A microfluidic device for processing a particle-containing liquid sample, including:

an enrichment region, including:

a retention member ~~configured so that liquid of a particle-containing liquid sample received therein exits the enrichment region along an exit path including a first surface of the retention member and particles of the particle-containing liquid sample are retained by the retention member~~; ~~and~~

a reservoir in communication with the retention member configured so that a first liquidic portion of a particle-containing liquid sample received therein enters the reservoir along an entry path including a first surface of the retention member, and particles of the particle-containing liquid sample are thereby retained by the retention member; and

a gate having an open configuration wherein a subset of the first liquidic portion exits the reservoir along an exit path ~~a pressure actuator configured to introduce fluid into the enrichment region along an entry path~~ including the first surface of the retention member, wherein the entry path is substantially opposite the exit path.

10. (Currently amended) A method for enriching a sample, including:

introducing a particle-containing fluidic sample to a microfluidic network;

applying a pressure to the fluidic sample to expel a first amount of the fluid of the fluidic sample through a filter configured to retain particles of the fluidic sample within the microfluidic network; and

subjecting the first amount of the fluid ~~retained particles of the fluidic sample~~ to a reduced pressure to cause a ~~second, smaller, amount of~~ portion of the first amount of the fluid ~~of the fluidic sample~~ to enter the microfluidic network through the filter and entrain the particles to form an enriched particle-containing sample.

11. (Currently amended) The method of claim 10, wherein ~~applying a pressure~~ the introducing includes mating a syringe to an input port of the microfluidic network.

12. (Currently amended) The method of claim 11, wherein the ~~step of~~ introducing the particle-containing fluidic sample also includes the applying a ~~applies the~~ pressure to expel the first amount of the fluid.

13. (Currently amended) The method of claim 12, wherein the subjecting the first amount of the fluid ~~particles of the fluidic sample~~ to a reduced pressure includes creating a vacuum within the microfluidic network ~~and placing~~ wherein the vacuum is in communication with the filter ~~retained particles~~.

14. (Cancelled)

15. (Cancelled)

16. (Currently amended) A method for enriching a particle-containing fluidic sample, including:

contacting [[a]] the particle-containing fluidic sample ~~(PCFS)~~ with a filter so that a first amount ~~portion~~ of the fluid of the ~~PCFS~~ particle-containing fluidic sample passes through the filter, and particles of the ~~PCFS~~ particle-containing fluidic sample are retained by the

filter, the fluid passing through the filter entering a chamber and increasing a pressure therein; and

allowing a ~~second, smaller,~~ portion of the first amount of the fluid to pass back through the filter and recombine with the particles retained by the filter.

17. (Cancelled)

18. (Original) A microfluidic device, comprising:

a lysing chamber having a volume of less than 10 microliters;

an upstream channel leading to the lysing chamber and a downstream channel extending from the lysing chamber;

a mass of a temperature responsive substance (TRS) disposed in the downstream channel, the mass of TRS configured (a) to inhibit downstream passage of material when material is introduced to the lysing chamber and (b) to pass downstream upon being heated to allow downstream passage of material from the lysing chamber.

19. (Currently amended) A method for lysing cells of a cell-containing sample, comprising:

introducing the cell-containing sample to a lysing chamber of a microfluidic device, a downstream channel extending downstream from the lysing chamber, the lysing chamber having a volume of less than 10 microliters, a mass of a temperature responsive substance ~~(TRS)~~ disposed in the downstream channel from the lysing chamber inhibiting downstream passage of the sample from the lysing chamber;

heating cells within the lysing chamber to a temperature sufficient to release intracellular material; and

heating the ~~TRS~~ mass of temperature responsive substance, whereupon the ~~TRS~~ temperature responsive substance and the intracellular material pass downstream.

20. (Currently amended) A method for processing a sample, comprising:

introducing a particle-containing liquidic sample to a microfluidic network of a microfluidic device, wherein the introduction generates a gas pressure within a reservoir

in communication with the microfluidic network the reservoir configured to receive at least some of a first liquidic portion of the particle-containing liquidic sample;

maintaining ~~storing~~ the pressure within the reservoir; and then

reducing ~~using~~ the gas pressure within the reservoir to move a subset of the first liquidic portion ~~the sample~~ within the microfluidic network.

21. (Currently amended) The method of claim 20, wherein reducing ~~using~~ the gas pressure comprises heating a temperature responsive substance to open a channel within the microfluidic ~~device~~ network wherein the subset of the first liquidic portion can move.